

IN THE CLAIMS

1. (Currently Amended) An OFDMA-TDMA (Orthogonal Frequency Division Multiple Access-Time Division Multiple Access) based wireless Internet terminal comprising:

a QoS profile storing information about a QoS policy;

a first module, comprising:

a classifier for identifying a type of packet traffic and classifying data packets corresponding to the packet traffic according to the QoS policy stored in the QoS profile,

an admission controller for determining admission or discarding of the classified data packets provided from a plurality of QoS queues based on a current call state and characteristics of the classified data packets, and

a first priority controller that gives first priorities to the classified data packets according to the QoS policy; and

a second module, comprising:

a PDU maker for generating PDUs from the data packets given the first priorities,

a second priority controller for determining second priorities of the PDUs according to packet information of the PDUs, wherein the packet information is based on a header or an identifier of a corresponding data packet, ~~and~~

a sorting queue for storing the PDUs based on the second priorities of the PDUs assigned by the second priority controller, and

a transmitter for arranging the PDUs given the second priorities in an allocated bandwidth to transmit the PDUs;

wherein the first module is constructed in a MAC layer by software and the second module is constructed in the MAC layer by hardware,

wherein the first module further comprises the plurality of QoS queues for dividing and storing the data packets classified by the classifier, and a plurality of priority queues for dividing and storing the data packets admitted by the admission controller based on their priorities,

wherein the classifier identifies the type of packet traffic and stores a data packet of the packet traffic in one of the plurality of QoS queues based on the QoS policy corresponding to the identified type,

wherein the admission controller stores the data packet, which is determined for admission, in one of the plurality of priority queues and discards data packets that have a degree of importance lower than a predetermined degree based on a network state, and

wherein the type of the packet traffic comprises at least one of audio data and burst data.

2. (Previously Presented) The OFDMA-TDMA based wireless Internet terminal as claimed in claim 1, wherein the QoS policy maximizes a bandwidth utilization rate and minimizes a packet loss rate in a current communication environment.

3. (Cancelled)

4. (Cancelled)

5. (Currently Amended) The OFDMA-TDMA based wireless Internet terminal as claimed in claim 1, wherein a PDU having a highest priority is located at a bottom of the sorting queue. ~~the second module includes a sorting queue sequentially storing the PDUs based on the second priorities assigned by the second priority controller.~~

6. (Previously Presented) The OFDMA-TDMA based wireless Internet terminal as claimed in claim 1, wherein the PDUs are MAC PDUs, and the second priority controller determines which one among an ACK packet, a management message packet and a user data packet, a corresponding packet is, based on headers or identifiers of the MAC PDUs and gives the second priorities to the MAC PDUS in the order of the ACK packet, the management message packet and the user data packet independently from the QoS profile.

7. (Previously Presented) The OFDMA-TDMA based wireless Internet terminal as claimed in claim 1, wherein the first priority controller gives data, which requires real-time transmission, a higher priority than data, which tolerates transmission delay, based on the QoS policy.

8. (Currently Amended) A packet processing method in a wireless Internet terminal, comprising:

identifying a type of data traffic and classifying and storing data packets corresponding to the data traffic based on a QoS policy;

determining admission or discarding of the classified data packets based on a current call state and characteristics of the classified data packets;

providing first priorities to the data packets that are classified and admitted, based on the QoS policy;

storing the data packets given the first priorities in a queue and sequentially outputting the data packets based on their first priorities;

providing second priorities to the data packets outputted from the queue according to packet information of the data packets given the first priorities independently of the QoS policy, wherein the packet information is based on a header or an identifier of a corresponding data packet;-and

storing the data packets given second priorities based on the second priorities in a sorting queue; and

arranging the data packets provided from the sorting queue ~~based on the second priorities~~ in an allocated bandwidth;

wherein identifying the type of the data traffic, classifying and storing the data packets, determining admission or discarding of the classified data packets and providing the first priorities to the classified data packets are executed by software, and wherein providing the second priorities to the data packets and arranging the data packets are executed by hardware,

wherein, in classifying and storing data packets, a data packet of the packet traffic is stored in one of a plurality of QoS queues based on the QoS policy corresponding to the identified type,

wherein, in determining admission or discarding of the classified data packets, a data packet, which is determined for admission, is stored in one of a plurality of priority queues, and

wherein the type of the packet traffic comprises at least one of audio data and burst data.

9. (Currently Amended) The packet processing method as claimed in claim 8, wherein a data packet having a highest priority is located at a bottom of the sorting queue. ~~arranging the data packets sequentially sorts the data packets based on the second priorities and arranges the sorted data packets in an allocated bandwidth.~~

10. (Previously Presented) The packet processing method as claimed in claim 8, wherein providing the second priorities to the data packets determines which one among an ACK packet, a management message packet and a user data packet a corresponding packet is, based on headers or identifiers of MAC PDUs, independently of the QoS policy and gives the second priorities to the MAC PDUs in the order of the ACK packet, the management message packet and the user data packet independently from the QoS profile.

11-14. (Cancelled)

15. (Previously Presented) The packet processing method as claimed in claim 8, wherein the QoS policy maximizes a bandwidth utilization rate and minimizes a packet loss rate in a current communication environment, and

wherein providing the first priorities to the classified data packets gives data, which requires real-time transmission, a higher priority than data, which tolerates transmission delay, based on the QoS policy.